

Remote / Rural Environments

In rural/remote locations utilities often utilize mechanical equipment to increase efficiency and improve worker safety. Large saws are mounted on high-reaching booms to prune the sides of right-of-way corridors. In some instances, saws are suspended from helicopters. When using this equipment, it is understood that the cuts made can be of lesser quality than those obtained when cutting by hand. Nevertheless, efforts are made to make cuts outside the branch bark ridge and branch collar to avoid damage to the bark of the parent tree.

Chemical side pruning is a method where specific herbicides are applied to the foliage of selected branches growing into the right-of-way corridor. The treated branches eventually die and are shed by the tree. This is an effective method to control growth on the edge of rights-of-way in remote and rural areas when falling branches will not threaten personal property or utility facilities.

In rural locations some typical arboricultural practices may prove impractical. An example would be the use of climbing spurs. While rarely used in an urban setting, they may be acceptable in remote areas.

The Right Tree in the Right Place

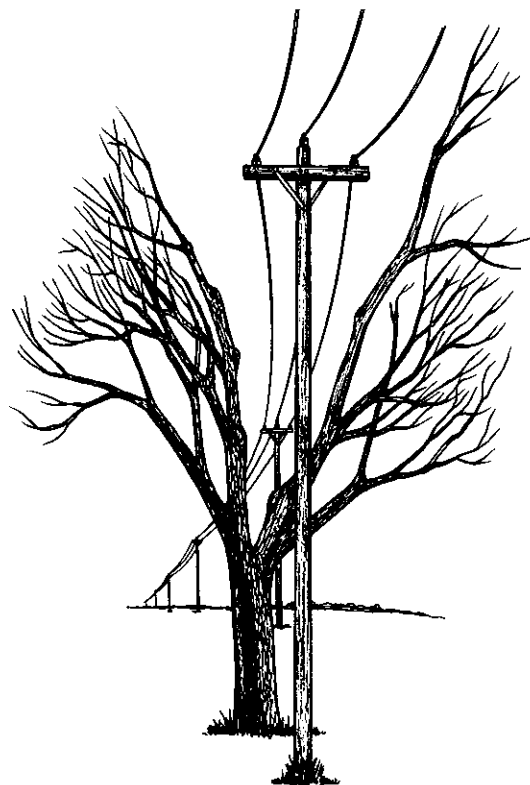
Planting the right tree in the right place can increase property value and energy efficiency of your home, and minimize property damage and power outages caused when trees come into contact with power lines. When planting a new tree, consider where you are placing it and what the tree will look like in 10 or 20 years. Look up from the proposed planting site and see if there are wires overhead or nearby. Also, don't forget to check for underground utilities prior to planting.

Additional Information

For additional information, contact:

- American National Standards Institute, www.ANSI.org
- Trees Are Good, www.treesaregood.org
- Tree Vitalize, www.treevitalize.com
- International Society of Arboriculture, www.isa-arbor.com
- Arbor Day Foundation, www.arborday.org/utility
- Utility Arborist Association, www.utilityarborist.org

Utility Pruning of Trees Best Management Practices



CAUTION: Do not attempt to prune or remove trees in contact or near electric lines unless OSHA line clearance certified. Contact your local electric utility before pruning near overhead electric wires.

Electric Utility Pruning Q & A

Why do electric utilities prune trees?

Safety - Utility vegetation maintenance reduces electric safety risk to the public by:

- providing a minimum separation between the lines and vegetation,
- reducing potential wildfire hazards from tree/wire conflicts and downed power lines, potential electrical shock
- maintaining services to vital infrastructure such as traffic signals, airports, water and sewer pumping stations as well as hospitals, nursing homes, fire and police stations.

Reliability - Trees are among the most common cause of utility service interruptions. Trees that are too close to power lines can interfere with electric service, especially when weather brings lightning, high winds, ice or wet snow.

Utilities have a preventative maintenance program that removes branches, vines, trees and brush from electrical equipment and energized conductors to help the overall quality of your electrical service.

The utility only removes vegetation that can potentially cause a safety hazard or an electrical outage when it grows into or contacts power lines or falls into lines due to weather or poor tree health.

How much will they cut from my tree?

Typically, a qualified utility forester or vegetation manager prescribes the amount and type of pruning that is necessary based on:

- Tree growth rate and structure
- Wind sway
- Line sag
- Tree species (this determines strong vs. weak wood, fast vs. slow growth)
- Health or vigor of the tree
- Environmental factors
- Irrigation
- Proximity of the tree to the power lines and the line configuration
- Voltage (the higher the voltage-the greater the clearance required)

Which pruning guidelines do the utilities follow?

The utilities follow the American National Standard Institute (ANSI) A-300Part1: Tree, Shrub, and Other Woody Plant Maintenance - Standard Practices, Pruning. These guidelines, endorsed by the International Society of Arboriculture (ISA), promote natural target pruning and directional pruning methods which minimize pruning stress to focus on tree health while obtaining needed clearance from conductors.

How often is line-clearing completed?

The clearance cycle or the time between maintenance activities varies from utility to utility and between different regions of the country. Sometimes the cycle is mandated by the state agency.

The interval is based on:

- Expected re-growth rates of the tree species present
- Amount of clearance that can realistically be obtained at the time of pruning
- Available program funding

Maintenance cycles are generally shorter where there is a long growing season or where there is a high percentage of fast growing tree species. In areas with a short growing season or fewer fast-growing tree species, the cycle can be longer. Some utilities conduct "mid-cycle" pruning and/or inspection process to mitigate the fastest growing tree species mid-way through a cycle.

My trees are not even touching any electrical wires. Why do they want to prune them?

Electric utilities are pro-active and prune trees **BEFORE** they pose a risk to the power lines. Trees and branches sway, vegetation and the environment are dynamic. Factors such as trees swaying in the wind, sagging with ice or snow, and uprooting in storms are examples of problems that can occur without warning. Tall growing vegetation under power lines can also pose a threat as the conductors can sag during high temperatures.

Addressing vegetation before it causes a problem is ideal to direct growth away from electrical conductors and facilities. Depending on tree species and location, it may take years before a tree presents a potential safety or reliability risk. However, fast growing trees planted near the power lines will need to be pruned or removed completely as they mature.

What is a line-clearance tree contractor?

As defined by Occupational Safety and Health Administration (OSHA), it is a company that is qualified to maintain trees near power lines. These companies employ qualified line-clearance arborists who receive ongoing electrical safety training as well as equipment maintenance and inspection programs to ensure tools are non-conductive for arborists who routinely work near energized power lines.

How are qualified utility line-clearance arborists trained?

Utility line-clearance professionals are qualified through OSHA. Only line-clearance professionals that meet OSHA qualifications can legally work within 10 feet of power lines. Line-clearance arborists are trained to prune trees according to American National Standards Institute (ANSI) A-300 standards and follow industry best practices, which helps preserve the health of your tree(s).

NOTE: Homeowner's should never hire a private tree contractor to work within 10 feet of energized conductors or attempt to do this work themselves.

What is directional pruning?

Directional pruning removes branches growing toward the conductors while leaving those growing away. Directional pruning is the most appropriate way to prune trees for electric utility line clearance. Branches are pruned properly (using the natural target method) to a lateral branch that is at least one-third the diameter of the branch being removed. This allows for good wound closure (reducing potential for internal decay) and reduces unwanted sprouting.

What is natural target pruning?

This is the proper method by which branches or limbs are removed from a tree. The cut is made close to the parent branch or limb, but without leaving a stub or damaging the branch bark collar.

How will a tree look after it is directionally pruned?

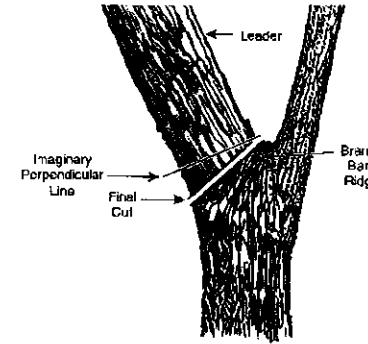
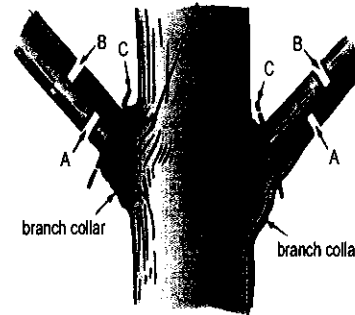
Trees growing directly under conductors may appear U or V shaped. Trees growing alongside a conductor may appear L shaped or one side may be removed from side pruning. The tree may appear misshapen, especially if you are looking down the street. In general, trees growing close to electric utility lines or facilities will never have the potential to grow with a completely "natural" looking shape.

Why not just top the trees?

"Topping" or stubbing is a detrimental practice that can result in poor tree health and form and is not recommended by arboricultural organizations.

Directionally pruned trees stay healthier than topped trees, have a better form, and require less pruning in the future because of the use of reduction cuts used in the directional pruning method. Certain species of trees, such as conifers, may appear to be "topped" after the main leader has been pruned, however, this does not necessarily have a negative effect on the tree's health.

Pruning Cuts-Natural Target Pruning



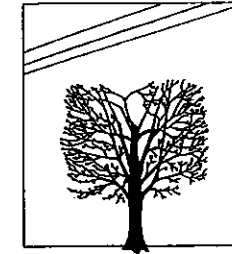
Large limbs should be pre-cut to avoid tearing the bark on parent tree. The first cut (A) undercuts the limb. The second cut (B) removes the limb. The final cut (C) should be outside the branch collar to remove the resultant stub. Pruning cuts should not damage the branch collar.

Leader removal on a co-dominant stem: the cut should bisect the angle between the branch bark ridge and an imaginary line perpendicular to the leader on the stem.

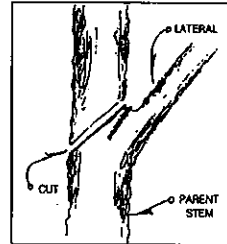
Pruning vs. Tree Removal

Situations where tree removal may be preferable to line-clearance pruning:

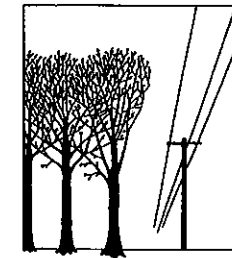
- Small, tall and fast-growing species directly under the lines that require frequent pruning and will never have a natural form and are a high risk to cause outages
- Sapling (brush) with the potential to grow into the lines
- Larger, previously topped trees under the lines
- Hazard trees (examples: leaning, in decline, severe die-back, hollow, split, etc.)



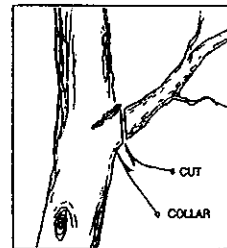
Natural Top Pruning



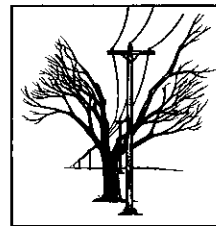
NATURAL PRUNING--This is a method by which branches are cut back at a suitable parent limb or lateral at the branch collar (see detail drawings on the right). This technique promotes growth of existing branches, rather than the rapid growth of many new suckers. Natural pruning can be used for both top and side pruning (as shown by the overviews on the left). Proper location of the cut will guide the tree growth away from the wires.



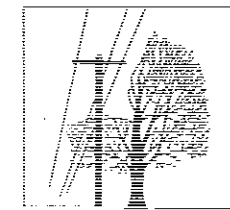
Natural Side Pruning



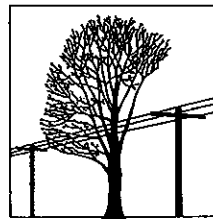
Examples of how directional pruning by utilities alter tree canopies



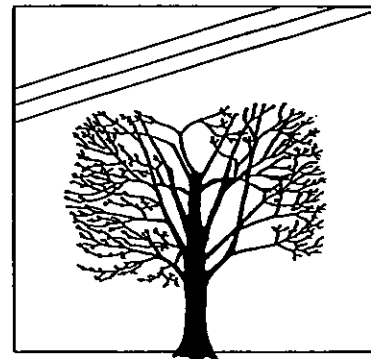
Top pruning



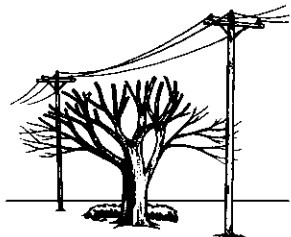
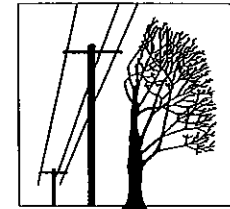
Through pruning



Under pruning



Side pruning: (top) examples of side pruning areas



DO NOT TOP TREES - this is an unacceptable practice of cutting the branch to stubs or laterals that are not large enough to assume the terminal role. This can severely weaken the tree and even kill some species. The net loss of foliage can lead to dieback of the remaining parts, which can lead to extensive decay problems.

Benefits of Natural Target Pruning

- Biologically better for the tree's health
- Sprouting is minimized
- Growth is directed away from the lines
- Less material may be removed in future pruning events
- Pruning costs will go down over time
- Creates a safer environment for the community

Why won't the utility put the line underground?

Undergrounding of lines comes with a very high price tag, coupled with more difficult (and longer) repairs in the event of a power failure. Also, converting an overhead system to underground may do more damage to the root systems of existing trees. Converting to an underground system would require abutting home owners to pay to have their service line (from house to the main line) put underground.